FLIGHT

The AIRCRAFT ENGINEER & AIRSHIPS

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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Sept. .... Italian Grand Prix
Sept. 30 .... Coupe Deutsch (300 kil.)
Oct. 16–21 Daily Mail £1,000 Gliding Competition
Dec. 15–Jan. 2 Paris Aero Exhibition

1923.

June .... International Air Congress, London
Dec. 1 .... Entries Close for French Aero Engine Competition

1924.

Mar. 1 .... French Aero Engine Competition
Mar. 15 .... Entries close for Dutch Height Indicator Competition

EDITORIAL COMMENT.

IF certain practical difficulties can be overcome, the suggestion of instituting annual inter-city championship air races, which has been made by Lieut.-Col. Spenser Grey, appears to be an eminently sound one, and one which would undoubtedly do a very great deal towards spreading an interest in and understanding of aviation. As Col. Grey remarks, it is no manner of use to clamour for a large air service and at the same time insist on rigid economy, and by encouraging towns and cities all over the country to subscribe towards the building of one or more aeroplanes for such a race, a material addition could be made to our aerial strength. Keen as was the interest displayed at all the controls during the race for the King's Cup, it would be a hundred-fold greater if all the cities at which there were controls were represented by their own machines in the race. It is scarcely to be doubted that, if handled properly, the suggestion should meet with general approval, and we imagine that the number of towns which would decide to enter machines would be very considerable.

Inter-City Championship Air Races

The suggestion that the machines thus brought into being should be earmarked for the new Auxiliary (or Territorial) Air Force, recruiting for which is to begin next spring, is also excellent, providing a way can be found to make the machines both suitable for the race and useful to a Territorial Air Force.

That there are difficulties to be overcome is hardly to be denied, and a great deal of goodwill on all sides will be necessary to make the scheme workable. For instance, in the very nature of things the proposed race will have to be a handicap one, as not only will the Territorial Air Force require several types of machines, but also the subscriptions of individual towns will vary in amount from a few hundred pounds to several thousands. Figuratively speaking, it should be possible for a very small town or large village to enter an Avro Baby, while London might provide a large high-power twin-engined bomber, and Southampton a large amphibian flying boat. Thus the race is limited from the very beginning to being a handicap one. That is not, perhaps, any

great drawback, although it should be remembered that, as the handicapping is based on performance in still air, if the day of the race should turn out very windy, the slower machines are handicapped by the wind to a much greater extent than the handicap in still air allows for. Thus the entrants of a slow machine might conceivably be dissatisfied, and a good deal of ill-feeling might be created which we should try to avoid at all costs. At any rate, we do not envy the handicappers their job.

Then again, it is suggested that machines should be built to one or other of the Air Ministry specifications. Who is going to decide which? Suppose, for the sake of argument, that for a given sum of money one can obtain either an amphibian flying boat, a large single-engined long-distance bomber, or a two-seater fighter. Who will decide which type a certain town with that amount of money subscribed shall buy? It is at any rate possible that the subscribers of the purchase price would prefer the two-seater fighter, as it would be faster and possibly stand a better chance in the race, although the R.A.F. (Territorial) might prefer the bomber.

Another point which comes to mind is, suppose the R.A.F. has had one of these machines for a year or so, and the machine is required for the inter-city or some other race, and that it is crashed by a service pilot a few days before the race. Will the subscribers be sporting enough to say: "Well, it is hard luck but it cannot be helped." We think most of them would, but it is rather asking a lot, although quite possibly the value to the country of that particular machine during the period it was with the R.A.F. may have been far greater than its sporting or propagandist value in the race.

We have no desire whatever to throw cold water on the project, which is, we think, one of the most promising ever put forward in this country, and one which, if found practicable, will in all likelihood do more towards educating the general public to an intelligent interest in aviation than has any other sporting event ever held here. But at the same time, it is no use closing our eyes to the fact that not inconsiderable difficulties will have to be overcome, and the framing of the rules will require the utmost care and consideration if friction is to be avoided. We believe that, given this goodwill on all sides, it should be possible to find ways and means, and we therefore heartily welcome the scheme and trust that it will duly emerge in concrete form.

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The New British Air Routes

According to schedule, the new air routes should begin operation on October 1. Under the new arrangement Handley Page Transport is to operate the London–Paris service, the Instone Air Line takes over the London–Brussels–Cologne route, and the Daimler Airways inaugurate the London–Amsterdam–Hamburg–Berlin route. Theoretically this re-arrangement of the subsidised air lines is all to the good, inasmuch as it does away with the competition between British firms operating over the same routes. As General Brancker said at the last Air Conference, we have quite enough competition from France, without increasing it by putting several British firms in competition against one another.

Now, however, it appears that the London–Berlin service, at any rate, may prove a "non-starter." The restrictions imposed by the Allies on German construction of aircraft in order that it might be classed as "civilian," limited the useful load, the power of the engines, and the amount of fuel that might be carried to a certain figure. This figure was such as practically to prevent commercial aviation in Germany, the idea being to make quite sure that the Germans did not produce commercial machines which could be converted into military aircraft. One result of the restrictions has been to lead our late enemies to make arrangements in various neutral countries for the construction of machines of a power and capacity which would have been classed as "military" machines if built in Germany. So far as we can see, and have always so insisted, there is no way of preventing this.

Now, at the eleventh hour, it is dawning upon our people that we (the Allies) may have been cutting off our nose to spite our face by these restrictions upon "commercial" German aircraft, for naturally the Germans are unlikely to make any one-sided arrangement whereby British (or French, for that matter) aircraft of high power and speed and large carrying capacity is allowed to fly on German routes on which German lines are only permitted to run "restricted" machines. When the announcement was first made that a new arrangement was to be made, it was naturally taken for granted that this side of the question had been given consideration, and it is therefore somewhat surprising to learn now, a week before the scheduled time of starting the services, that difficulties arising out of regulations which have been in force for months are likely to prevent the inauguration of the new services. The matter appears simple enough: Either we cut off Germany from air communication with the rest of the world, and in so doing we cut ourselves off from air communication with (and presumably across) Germany, or else Germany is placed on an equal footing with us, at any rate over such lines as are to be operated conjointly by British and German firms, and we in return have the right to run our lines to Germany. The present arrangement is an unsuccessful attempt to eat our cake and keep it too.

We trust that means may be found to surmount the present difficulties, and that the inauguration of a line which could hardly fail in time to prove one of the most important of those radiating from London will not be unduly delayed. That the line to Berlin would soon become a success there can be little doubt. Two simple facts ensure this: the single fare has been fixed at £5 10s., which is no more than the first-class railway fare, while the time taken between London and Berlin is about seven hours by air as against twenty-four hours by train.

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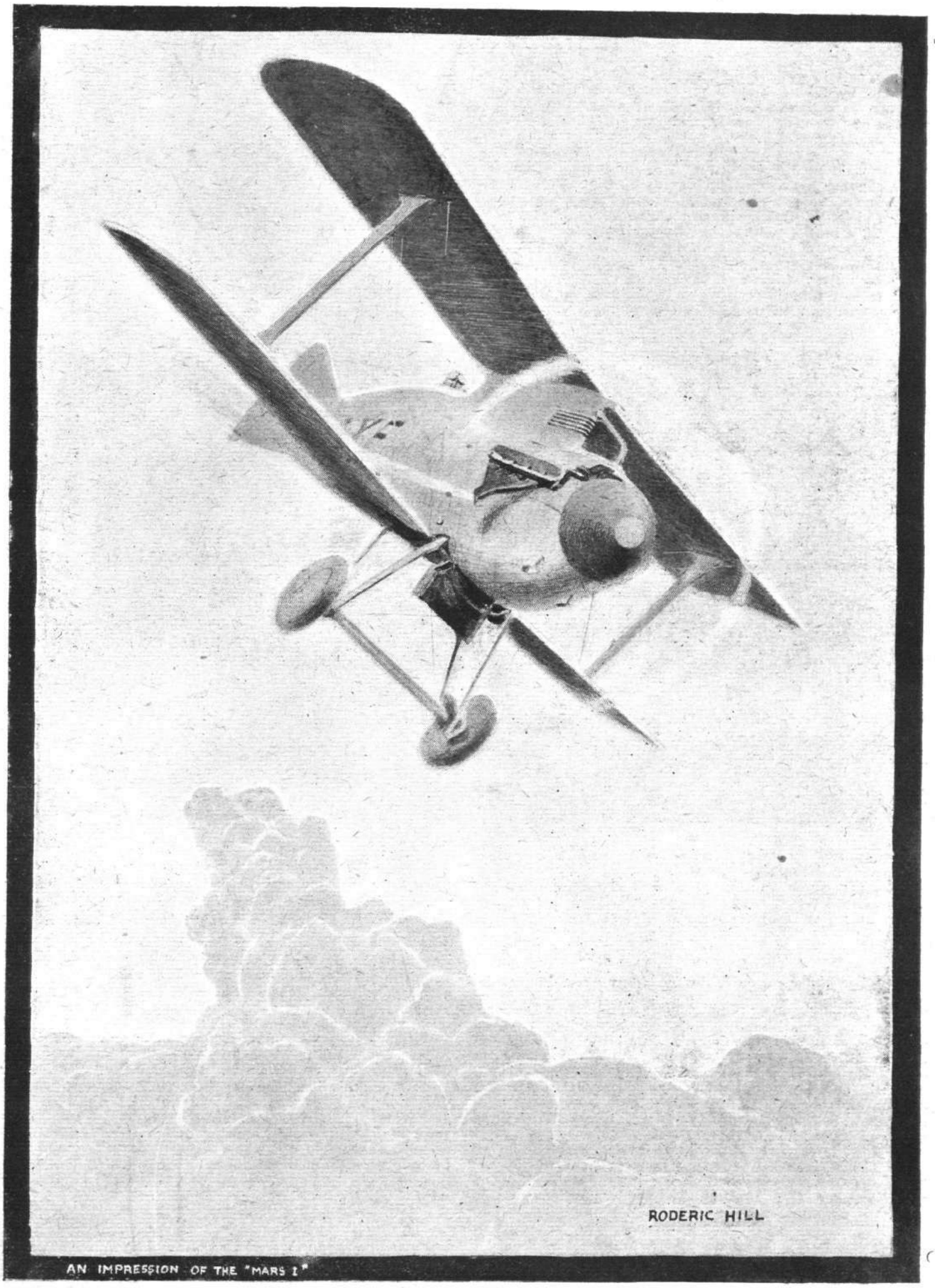
The Forthcoming Gliding Competition

The site for the gliding competition for the *Daily Mail* prize has now been chosen, and particulars will be found on another page of this issue. The site appears to be very well suited for the purpose, and it has the great advantage of being within easy reach of London. Seven entries have been officially received at the moment of writing, and it is expected that very many more will be in the hands of the Royal Aero Club before the closing date, October 7, among those expected being several French entries. It now seems fairly certain that no German competitors will be coming over for our gliding week. The interest in gliding which is now so manifest among the general public is a very good sign, and we firmly believe that gliding as a sport will quickly become popular.

For the Deutsch Cup.



From the orig1nal byRoderic M. Hill

An Impression of "Mars I."

MAP-MAKING AND AERIAL PHOTOGRAPHY

Canada's Use of the New Method

ALTHOUGH it is realised that rapid and excellent work can be done by taking vertical photographs and, piecing the separate exposures together, thus obtain a photographic map of any town or district, the speed and accuracy which this new method, opened up by the advent of aircraft, can give is, perhaps, less generally appreciated. In this connection it would be difficult to find a better example than the accompanying hydrographic chart and aerial photographic mosaic of the same area, the St. Lawrence River and canals in the vicinity of Cornwall Island, showing the town of Cornwall, Ontario. From the General Progress Report of the Air Board of Canada, covering a period of six months (from October 1, 1921, to March 31, 1922), we quote the following notes :—

"Attached to this report are two illustrations showing comparisons between mosaics and maps made from actual ground surveys. The maps used in this case are charts made by the Corps of Engineers of the United States Army and issued by the United States Lake Survey Office. Probably no more accurate mapping and finer reproduction could be chosen for comparison purposes. The mosaics were made during last summer by the Air Board for the Canadian Section of the International Joint Commission for use in connection with their report on the St. Lawrence Waterway project. The detail in both suffers somewhat from reproduction and the reduction of scale. This is specially so of the mosaic, as it has had to be re-photographed several times with consequent loss of sharpness in detail.

"The pictures were taken from a D.H.4 aeroplane, at an altitude of 8,000 ft., with a K.1 film camera made by the Eastman Kodak Company, flown from Ottawa Air Station by Flight-Lieut. H. L. Holland. The flying conditions were excellent, and so closely did the prints from the original negatives match that no rectification of the individual negatives was found necessary. This shows that under good flying conditions and with careful and skilled piloting remarkably accurate results can be obtained.

"Owing to constant changes in light and shade on the water surfaces, due to ripples caused by the varying winds, passing watercraft and other natural conditions, it was found impossible to obtain even matching in texture of the pictures forming the mosaic over such areas. To obviate the patchy appearance due to this, the water areas were brushed over so as to give a uniform texture. With this exception the mosaic was made direct from prints off the original negatives without retouching or rectification of any kind.

"The possibilities of time and labour saving in map-making can readily be seen from the comparison. Aerial surveying by photographic methods is being rapidly developed, and scientists in many countries are working on the development of maps, accurate to scale and elevation, from oblique and vertical aerial photographs. Mosaics such as are shown here do not pretend to absolute accuracy, and cannot at present take the place of maps made from ground surveys. They are rather supplementary to them, giving an actual reproduction of the terrain as it exists, and showing it in much greater detail than the most carefully made map can do.

"Provided a series of points, recognisable from the air, were fixed on the ground along a stretch of country of which a map was required, the whole of the detail of the map could be transferred from vertical aerial photographs taken and the laborious process of traversing the whole could be dispensed with."

A comparison between an aerial mosaic and a hydrographic chart of the St. Lawrence River and Canals in the vicinity of Cornwall Island, showing the town of Cornwall, Ontario. The mosaic and chart are to the same scale, and cover an area of over 10 square miles. The comparison will indicate the accuracy with which topographical detail is revealed in aerial photographs and the possibilities of their use in the revision of existing maps. The taking of the photographs in this instance (140 exposures in all) required but a single flight of 2½ hours.

Senior Officers' School

ARMY ORDER 308, just published, states that the following are among the officers who have attended the 9th Course at the Senior Officers School, Woking, from May 26 to August 18, 1922 :—

R.A.F.—Squad.-Leader H. J. F. Hunter, M.C., and Squad.-Leader A. J. Butler, M.C., A.F.C.

Pilot's Rescuer Rewarded

THE Board of Trade, on behalf of the Air Council, have awarded a gold watch to William Thomas Hawkins, Rescue Boatman of Forth Bridge, and £5 each to his assistants, Richard Marshall and John Allan Ritchie, in recognition of their services in rescuing a flying officer who fell into the Firth of Forth in his Sopwith Camel, on May 29 last.

FLIGHT

THE BELLANCA CF FIVE-SEATER COMMERCIAL "SESQUIPLAN"

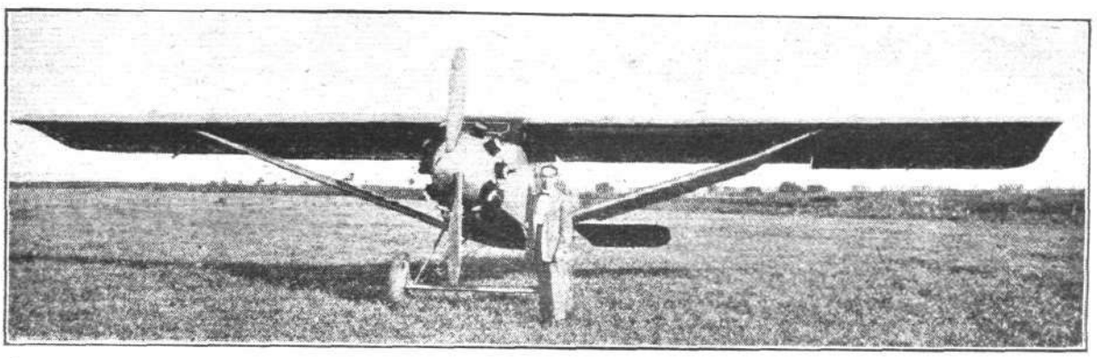
ON the occasion of the flying meeting held at Monmouth, Ill., U.S.A., last June, some considerable stir was caused in aviation circles by the appearance of a new American-built machine, which carried off the first prizes in the four competitions in which it took part. This machine was the Bellanca CF five-seater cabin-type "Sesquiplan," or "one-and-a-half-plane." It has been designed by G. M. Bellanca—who was responsible for the successful small, low-powered biplanes bearing his name of 1918—with the financial assistance of Victor H. Roos and others of Omaha, Nebr.

The Bellanca CF embodies several noteworthy features, such as, apart from general design, low landing speed and quick take-off, high speed with high pay load, simplicity of design, low head resistance—although not of the cantilever or internally-braced type, external bracing wires are conspicuous for their absence—and economy. The primary object before the designer was to produce a machine with an increased carrying capacity per h.p. of useful load, which at the same time had a low cost of manufacture and low cost of maintenance.

Actual flights have demonstrated that the above characteristics have been successfully fulfilled, and a remarkably efficient machine produced. With a 90 h.p. Anzani engine and pilot and four passengers, the Bellanca CF accomplished a speed of 109·8 m.p.h., over the measured course (six half-mile flights, three each direction) at the Fort Crook Army Field. The landing speed is claimed to be as low as 30 m.p.h.

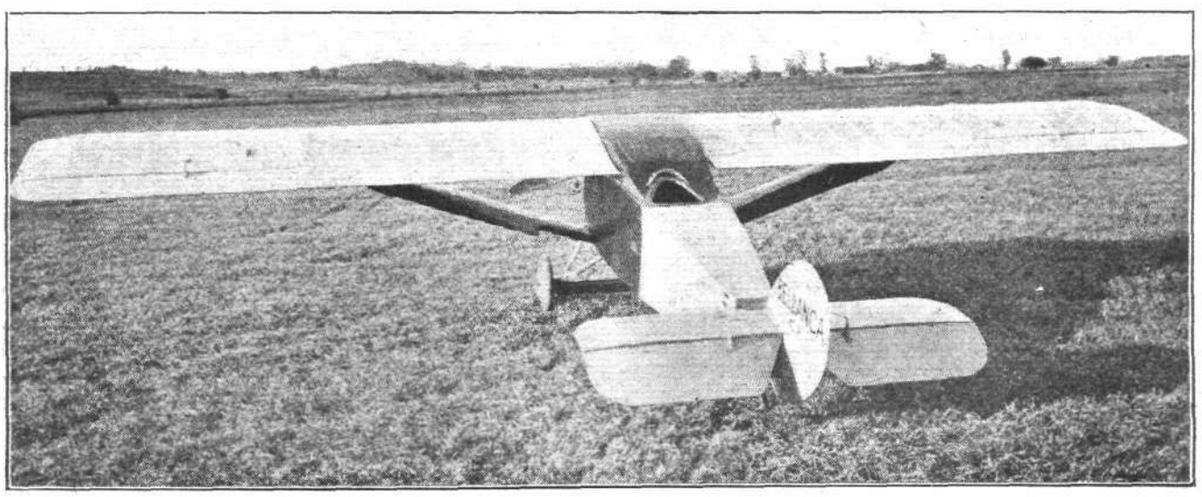
In the trial flights the machine handled remarkably well, and showed a remarkable degree of inherent stability—flying several complete circles with only the rudder control in action. It also carried out all the usual "stunts" (loops, spins, etc.) in a satisfactory manner.

Before passing on to a brief description of this machine, it may be of interest to refer to the events won by this machine at the Monmouth meeting—previously mentioned. In a speed contest, it covered the 15-mile triangular course in 9 mins. 15 secs., as against 11 mins. 30 secs. put up by the second machine, fitted with a 150 h.p. engine. In the gliding contest it took 4 mins. 43 secs. to descend (engine off) from 2,000, covering a distance of 4½ miles, equivalent to a gliding angle of 1 in 12. Such a performance indicates a valuable feature in the event of an engine failure when on a cross-country flight, enabling the pilot to look around for a suitable landing ground. Another event was the climbing contest, in which this machine, reached an altitude of 7,000 ft. in 11 mins.

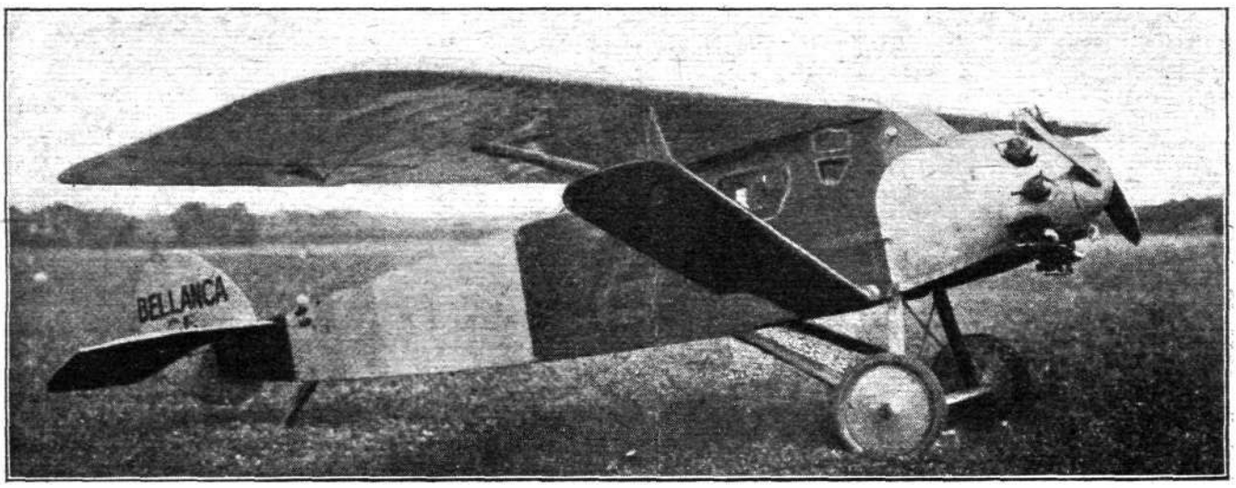


THE BELLANCA CF 5-SEATER "SESQUIPLAN": Front view.

As will be seen from the accompanying illustrations, the Bellanca CF is a monoplane with comparatively small auxiliary planes, set at a fairly pronounced dihedral angle, underneath the main planes, and serving as braces for the latter. The *fuselage*, which is of good streamline form, is of the composite type, and is of box-veneer construction with internal reinforcing of Port Orford cedar, forming a stiff frame of triangles and box-girder construction with cables and wires. The forward portion, just behind the engine, is formed into a roomy cabin at the top of which are the main plane attachments. The position of the cabin is such that the weight of the passengers coincides, at all times, with the centre of gravity of the machine. Thus the machine is always well-balanced, whether with full or light load. The cabin is of veneer construction, and accommodates four passengers, with comfort, the rear passengers facing forward, whilst those in front can face either forward or backward. Should occasion arise, six passengers can easily be taken in the cabin. On each side of the cabin are three windows, and in front a



THE BELLANCA CF 5-SEATER "SESQUIPLAN": Rear view, showing the pilot's cockpit.



THE BELLANCA CF 5-SEATER "SESQUIPLAN": Three-quarter front view.

l arge window gives a good view ahead, looking over the engine. Air intakes provide for the ventilation of the cabin, and if necessary the front window can be opened as widely as desired. As the engine compartment is completely separated from the cabin, it is possible to smoke in the latter, whilst the noise from the engine is reduced to a minimum.

At the rear of the cabin is the pilot's cockpit, aft of which the *fuselage* tapers sharply to a vertical knife-edge. The pilot's view forward is, we should say, somewhat restricted by the top of the cabin, but by looking over the sides he has a fairly clear view forward under the main planes.

The main characteristic of the wing construction is extreme simplicity. The spars are of Port Orford cedar I-beam cross-section, and the ribs are a combination of bass wood, ash and fabric. The average strength of these ribs, which weigh about 9 ozs. each, is stated to be 700 lbs.

The wing spars extend beyond the wing roots, and pass through the top of the cabin to the attachment within, so that port and starboard spars abutt, forming thereby what is practically a continuous beam. Thus, the main stresses of the wings are not transfered to the *fuselage*. Extending from the lower *longerons* of the *fuselage* up to a point on the main wings about midway out from the roots are the auxiliary planes, the spars of which are splayed out near the extremities, so as to attach to the front and rear spars of the main wings; they are left uncovered at this portion, and practically speaking take the form of struts. These auxiliary wings thus take the landing and flying stresses, thereby eliminating the usual bracings, streamline struts and wires, and so considerably decreasing the weight and head resistance whilst at the same time adding to the lift. They have the further advantage of improving the lateral stability of the machine, by virtue of their pronounced dihedral angle.

The load factor for the lifting stresses is 14, the lift being taken by ¼ in. cables attached to the spars of the main wings at the cantilever points, and passing through the auxiliary wings and through the *fuselage*. The load factor at the cantilever point of the rear main spar is 9—this being the weakest point in the machine—and for the front spar 10½. The safety factor for the reverse air load is 5½, which is claimed to be more than sufficient. While on the subject of safety factors, it may be mentioned that the *fuselage* is capable of withstanding a load of 70 lbs. per sq. ft. applied at the tail, the f.s. of the various members having been figured at 2. The stabiliser and elevators are made to withstand a load of 50 lbs. per sq. ft., and the rudder a load of 35 lbs. per sq. ft. The f.s. of the landing gear is 8.

The main wings are of fairly thick section, and have an L/D of 20, the centre of pressure displacement being 10 per cent. of the chord; the drift at low angle is very small, making the wing well adapted for high speed. The cross-section of the lower wing—the thickness of which is 16 per cent. of the chord—is such that its L/D is 16·4; the combined L/D of the complete supporting unit (main wings, auxiliary planes, and resistance of short wires and struts) is 18, which compares very favourably with the internally braced wing, in that it gives lighter construction, higher L/D, and smaller drift at low lift coefficient.

The tail group is composed of a non-lifting fixed stabiliser, with divided elevators and rudder. The attachment of the stabiliser is such that it can easily be detached by removing four cotter pins. Control cables pass within the *fuselage*.

A 90 h.p. 10-cylindered air-cooled Anzani engine is fitted within a neat streamlined nose piece, only the cylinder heads being exposed to the open. The tractor screw, designed by Prof. Bellanca, is 8 ft. diameter by 8 ft. pitch, and is fitted with an aluminium spinner having air vents which cool the covered part of the engine. Two magnetos are fitted, and a double oil pump assures ample lubrication under all conditions.

The landing gear is of the conventional V-type, consisting of stout ash streamline struts—glued together with birch veneer—and rubber sprung axle enclosed by a fairing having a lifting cross-section.

The principal characteristics of the Bellanca CF are :—

Span (main)	40 ft.
Span (auxiliary)	22 ft.
Chord (main)	6 ft. 6 ins.
Chord (auxiliary)	2 ft. 6 ins.
Overall length	23 ft. 10 ins.
Total wing area	290 sq. ft.
Weight empty	950 lbs.
Weight loaded	1,990 lbs.
Weight/sq. ft.	6·85 lbs.
Weight/h.p.	22·1 lbs.
Useful pay-load	680 lbs.
Speed range (full load)	40-108 m.p.h.
Climb in 10 mins. (full load)	5,000 ft.
Range (full speed)	440 miles.
Miles per gall. of fuel	16 miles.

A League of Nations Air Force?

IN the course of a speech at Ripley, Derbyshire, on the 19th inst., General Seeley, referring to the Near East trouble and the necessity for the League of Nations to be equipped with an efficient police force, suggested that this force should be a naval force and an air force. "With these two powers you can cut the communications of any hostile array. Had the League of Nations had both the authority and the power, this latest war could never have occurred. The Greeks were warned not to advance. International sea power would have cut their communications and rendered their advance impossible. Had Mustapha Kemel attempted to advance, international air power would have cut his communications and broken up his concentrations."

Experiments with Helicopters

IT is reported that M. Damblanc intends to carry out some interesting experiments with helicopters in November, with the object of making observations on their fall through the air when dropped from a balloon at an altitude of about 4,000 ft. The helicopters will not, of course, carry pilots, but will be fitted with instruments which will record the various phases of the descent, which, according to M. Damblanc, will not be more than 30 ft. per second.

FLIGHT

THE ROYAL AERO CLUB OF THE U.K.

OFFICIAL NOTICES TO MEMBERS

COMMITTEE MEETING.

A MEETING of the Committee was held on Wednesday, September 20, 1922, when there were present: Lieut.-Col. F. K. McClean, A.F.C., in the Chair; Group-Capt. F. W. Bowhill, C.M.G., D.S.O., R.A.F.; Maj.-Gen. Sir W. S. Brancker, K.C.B.; Mr. Ernest C. Bucknall, Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S.; Lieut.-Col. M. O'Gorman, C.B.; Mr. F. Handley Page, and the Secretary.

Election of Members.—The following new Members were elected :—

Maj. H. G. Brackley.
Charles Roderick Carr.
Henry Douglas Clark.
Arthur John Hawes Elverson.
Richard Claude Hancock.
Everard John Boothby How.
Flying Officer Thomas Albert Gibbs Hudson, R.A.F.
Flight-Lieut. W. H. Longton, R.A.F.
Charley Edmond William Ricou.
Lieut. Joseph Russell Stenhouse, R.N.R.

The King's Cup Race.—The Reports of the Racing Committee, the Stewards of the Meeting and the Judge were received.

On the motion of the Chairman, a unanimous vote of thanks was passed to the following for the valuable assistance rendered in the organisation of the race :—

Royal Air Force, for supplying mechanics at each control.
The Air Ministry, Controller of Communications and Press Section.
The Handicappers, Lieut.-Col. W. A. Bristow and Capt. R. J. Goodman Crouch.
Aerodrome Officials.
Maj. Gilbert Dennison, Birmingham Control.
Mr. A. E. George, Newcastle Control.
Mr. J. Allison, Jun., Glasgow Control.
Mr. John Lord, Manchester Control.
Mr. H. J. Thomas, Bristol Control.

The thanks of the Club were also accorded to Maj.-Gen. Sir W. S. Brancker, K.C.B., the Racing Committee, and the Club officials who organised and carried out the details of the race.

Jacques Schneider Cup, 1922.—It was decided to hold a banquet towards the end of October to commemorate the British victory of the Supermarine Napier Flying Boat in the Jacques Schneider Cup, 1922, and to present a silver salver to the pilot, Capt. H. C. Biard.

F.A.I. Conference, Rome.—The Committee considered the various questions down for discussion at the F.A.I. Conference to be held in Rome on October 8–12, 1922. Lieut.-Col. M. O'Gorman, C.B., was appointed delegate to attend on behalf of the Royal Aero Club.

Air Conference, 1923.—Lieut.-Col. M. O'Gorman, C.B., was nominated to represent the Club on the Committee of the Air Conference to be held in February, 1923, organised by the Air Council.

Gliding Committee.—The reports of the Gliding Committee dated August 28 and September 14, were received and confirmed.

Detroit Aviation Race.—The application to include a portion of Canadian territory in the Detroit Aeroplane Race in October was granted subject to the approval of the Aero Club of Canada.

Deutsch Cup.—The entry of the Gloucestershire Aircraft Company of Cheltenham was confirmed.

The Secretary reported the arrangements made between the Royal Aero Club, the Aero Club de France, and the Compagnie Générale de Navigation Aérienne regarding the free entry of the British machine into France for the race, which were approved and confirmed.

Maj.-Gen. Sir W. S. Brancker, K.C.B., Lieut.-Col. F. K. McClean, A.F.C., and Mr. H. E. Perrin were appointed to represent the Club at the Race for the Deutsch Cup to be held at Etampes on September 30, 1922.

Aviators' Certificates.—The following Aviators' Certificates were granted :—

7930. The Hon. Elsie Mackay. August 14, 1922.
7931. Henry Vigne. October 12, 1918.

Aeronauts' Certificates.—The following Aeronaut's Certificate was granted :—

280. Cyril W. Price. October 30, 1918.

GLIDING COMMITTEE.

A Meeting of the Gliding Committee was held on Thursday, September 14, 1922, when there were present: Lieut.-Col. M. O. Darby, in the Chair, Lieut.-Col. W. A. Bristow, Maj. O. T. Gnosspelius, Mr. W. O. Manning, Capt. W. H. Sayers. In attendance: Mr. B. Reynolds, Mr. F. Entwistle (Meteorological Department, Air Ministry) and the Secretary.

The Committee considered the reports on the site for the Gliding Contest, and it was decided to select Itford Hill, on the South Downs, near Lewes.

The Secretary was instructed to approach the owners and make the necessary arrangements.

GLIDING COMPETITION

(Under the Competition Rules of the Royal Aero Club and the Regulations of the Fédération Aéronautique Internationale)

For the Prize of £1,000 offered by the Proprietors of the "Daily Mail." October 16–21, 1922.

The Gliding Committee has selected Itford Hill, Newhaven, for the Gliding Competition for the £1,000 Prize offered by the proprietors of the *Daily Mail*.

Shed accommodation will be provided free, and will be available from October 12.

Machines by rail should be sent to Glynde Railway Station.

Machines from abroad should be sent to Newhaven.

Transport from both these stations to the sheds can be arranged through the Secretary, Royal Aero Club, 3, Clifford Street, London, W. 1.

The prize of £1,000 offered by the proprietors of the *Daily Mail* will be awarded to the competitor who remains the longest time in the air, providing such flight occupies not less than 30 minutes, under the following conditions :—

Supplementary Regulations

All flights must be commenced between sunrise and sunset.

Organisation.—The Competition will be conducted by the Royal Aero Club.

Competitors.—The Competition is open to persons of any nationality holding a licence issued by any Aero Club affiliated to the Fédération Aéronautique Internationale. (NOTE.—Licences for British competitors will be issued by the Royal Aero Club.)

The Competition is open to any heavier-than-air machine not provided with any motive power except that produced by the personal exertions of the occupants during flight and which is not supported either wholly or in part by any gas which is lighter than air.

Timing.—The timing of flights will be taken from the moment at which free flight commences until first contact with the earth. The machine must have no connection with the earth during flight.

Alighting.—The alighting must take place within an area which will consist of a circle of a radius of approximately 800 yards measured from the official point of departure.

Entries.—Entries must be made to the Royal Aero Club, 3, Clifford Street, London, W. 1, not later than 5 p.m. on Saturday, October 7, 1922. There is no entry fee.

The Royal Aero Club, in the interests of safety, reserves to itself the right to refuse any entry and/or to prohibit the flight in the Competition of any competitor if it considers the flight would be dangerous.

Entries.

Capt. Frederick Warren Merriam, Whiteley Bank House, Wroxall, Isle of Wight (Monoplane).

Maj. Maurice Edgar Arthur Wright, Mr. Frank Courtney, Mr. W. H. Sayers, c/o *The Aeroplane*, 175, Piccadilly, W. 1 (Monoplane).

Mr. Arthur Henry Knott, 119, Pentre Treharne Road, Landore, near Swansea (Monoplane).

George England (1922), Ltd., Hersham Road, Walton-on-Thames, Surrey (Monoplane).

Mr. John Hogg Robertson, 1, Albemarle Street, W. 1 (Monoplane).

Mr. James M. Hargreaves, 39, Lynmouth Road, Reading (Biplane).

John J. O'Freddy, 56, St. Martin's Lane, London, W. 1 (Biplane).

Offices: THE ROYAL AERO CLUB,
3, CLIFFORD STREET, LONDON, W. 1.
H. E. PERRIN, Secretary.

GLIDING, SOARING AND AIR-SAILING

Those wishing to get in touch with others interested in matters relating to gliding and the construction of gliders are invited to write to the Editor of FLIGHT, *who will be pleased to publish such communications on this page, in order to bring together those who would like to co-operate, either in forming gliding clubs or in private collaboration.*

IT is now reported that M. Barbot will fit a small engine in his Dewoitine monoplane and attempt a flight across the Channel, presumably in order to attempt to win the Blériot prize. The time for the attempt is not definitely settled, but it is thought that the machine may be ready during October.

* * *

IN a letter to the Editor of our American contemporary, *Aviation*, Dr. Georg Madelung, one of the designers of the Hannover glider "Vampyr," on which Herr Hentzen remained aloft for 3 hrs. 10 mins., gives some very interesting information about the design of that machine. From Dr. Madelung's letter we quote the following, which has its application, as regards the first part of it, to power-driven machines no less than to gliders :—

"The surprisingly high quality of the aerodynamical properties of this glider was not obtained by a particularly suitable *form* of the body. I had developed the form of the body principally from the constructional standpoint. It has, for instance, not only a rectangular section, but also a rather pronounced corner on its under side, comparable to the step of a float. We had a competitive test between this odd-shaped body and a real 'streamline' body, with round section very appealing to the eye. The tests were made with a large model, 1/10 size, in which all drag producing parts were taken into consideration—tail surfaces, tail skid, pilot's head. The foot balls only were neglected. The air speed of the wind tunnel was about three times the actual gliding speed. The scale effect can, therefore, almost be neglected, and I believe that the results of this test are reliable, not to speak of the usual thoroughness of Dr. Prandtl's institute.

"*The results were remarkable. The odd-shaped body was slightly superior to the streamlined body. At large angles of incidence the model with this body had a higher lift and a better lift/drift ratio than the model with the streamlined body. It was even better than the bare wing.*

"This does not mean, of course, that a body of primitive form has less resistance than a well streamlined body. It shows only that I had found a particularly suitable arrangement for the body where it had no detrimental influence on the wing.

"The particular merit of this glider is neither its good L/D, which is equal to 16, nor its high maximum lift, which is $C_a = 165$ per cent., or in American units : $K_y = 0.0042$. [This is equal to a lift coefficient of 0.82 in English 'absolute' units.—ED., FLIGHT.] To obtain a low rate of descent it is necessary to have both of these factors at the same time, at the same angle of incidence. The characteristic factor which determines the rate of descent is :—

$$\text{In (German) absolute units } \frac{C^3_a}{C^2_w} \text{ or}$$

$$\text{In (American) } \frac{\text{lb.}}{\text{sq. ft.}} \times \left(\frac{\text{Hour}}{\text{Miles}}\right)^2 \text{ units : } \left(\frac{L}{D}\right)^2 \times K_y$$

"I developed for my glider a section, which has not only a very high maximum lift, but also a section drag for high lift lower than any other section so far tested, and obtained thereby a value :—

$$\frac{C^3_a}{C^2_w} = 305 \qquad \text{or}$$

$$\left(\frac{L}{D}\right)^2 \times K_y = 0.78$$

"The Rhoen mountains are very different from the average flying field. The glider must be handled, started and landed on 20 per cent. slopes, in fields covered with stones, fences and bushes, and sometimes in treacherous winds. It was, therefore, necessary to design the glider not only for a high magnitude of forces, but also for forces of very different kinds. Such cases had to be considered as hitting the ground or a fence pole with the wing tip, the nose, the elevator, or even the case of completely turning over. This precaution proved to be necessary, for in one of the first flights a start failed. The plane touched the ground first with one wing tip, then with the nose of the body. The damages were local only, and could be repaired within a couple of days."

* * *

The Göttingen experiments on models of the Hannover *fuselage* indicate that we really know far less about the subject of lift and resistance than we think we do, and that the practice which has been followed hitherto of estimating the resistances of the various components, and adding them together to get the resistance of the complete machine, may lead to serious error. It appears to be time we got to think of an aeroplane as a whole, and not as a conglomeration of separate parts. We believe that in the case of the de Havilland monoplane a somewhat similar result was obtained, *i.e.*, the efficiency and lift of the wing was increased by the presence of the *fuselage*.

* * *

GLENN CURTISS, the famous American aircraft designer and constructor, who was one of the first to fly, has designed, built and flown a small seaplane glider. The machine was, it appears, towed behind a fast motor-boat until it got up sufficient speed to rise. It is stated to have alighted safely. It may be remembered that in the very early days of flying M. Voisin made similar tests on the Seine with aeroplanes towed along by motor-boats. Owing to the imperfect knowledge of design in those days, M. Voisin's towed aeroplanes came to grief on more than one occasion.

* * *

IN the Royal Aero Club Notes in this issue will be found announcements relating to the site chosen for the forthcoming gliding competition for the *Daily Mail* prize, and to the entries so far received. The latter number seven, but as entries are received up to Saturday, October 7, it is hoped that this number will be very greatly increased before the closing of the entries list. Incidentally we would remind our readers that there is no entry fee, and consequently no forfeit in case of non-starting. We therefore recommend all who are hoping to get machines ready in time to enter them at any rate, so that, if finished at the last moment, they may not be debarred from taking part in the competition. By this we do not mean that people who have no possible chance of getting a machine ready in time should enter. That would be unfair to the Royal Aero Club, as it would give the organisers a lot of unnecessary work. But if there is a possibility, even if it appears at the moment somewhat remote, our advice is, *Do not delay.*

* * *

WITH regard to the machines themselves, but little information is available at the moment, as entrants are naturally not over anxious to give away too many details of their machines before the competition. A few particulars may, however, be of interest. The glider entered by Merriam is of his own design and construction. It is, we believe, a cantilever monoplane, not unlike the famous Hannover "Vampyr" in general arrangement. Mr. Merriam is building it in one of the large sheds belonging to Mr. S. E. Saunders, of Cowes, Isle of Wight, who has, with his usual generosity where sport is concerned, placed it at Merriam's disposal. Mr. Newman, works manager of the Saunders aircraft department, is interested with Merriam in the construction, and between the two of them they should turn out a very useful machine. We learn that the Merriam-Newman monoplane has a span of 36 ft., and that it will weight about 200 lbs. empty. In the competition the machine will be piloted by Merriam.

* * *

THE machine entered by Maj. Wright, Mr. Courtney and Capt. Sayers is also a monoplane, designed, we believe, by Capt. Sayers, and to be piloted by Mr. Courtney. The monoplane is being built by the Central Aircraft Co., of Kilburn, and will have a wing span of 42 ft. and a weight empty of 200 lbs., bringing the loaded weight up to about 350 lbs., or approximately the same as that of the Merriam-Newman glider.

* * *

MR. GORDON ENGLAND has now started work on his machine in real earnest, and hopes to have it ready by the end of this month. His machine is a cantilever monoplane with enclosed *fuselage*, and it is stated that he hopes to be able to build it for a weight of less than 100 lbs. As Mr. England is one of our pioneer pilots (also of gliders), the performance of his machine will naturally be watched with great interest, and we hope shortly to be able to announce that other "old-

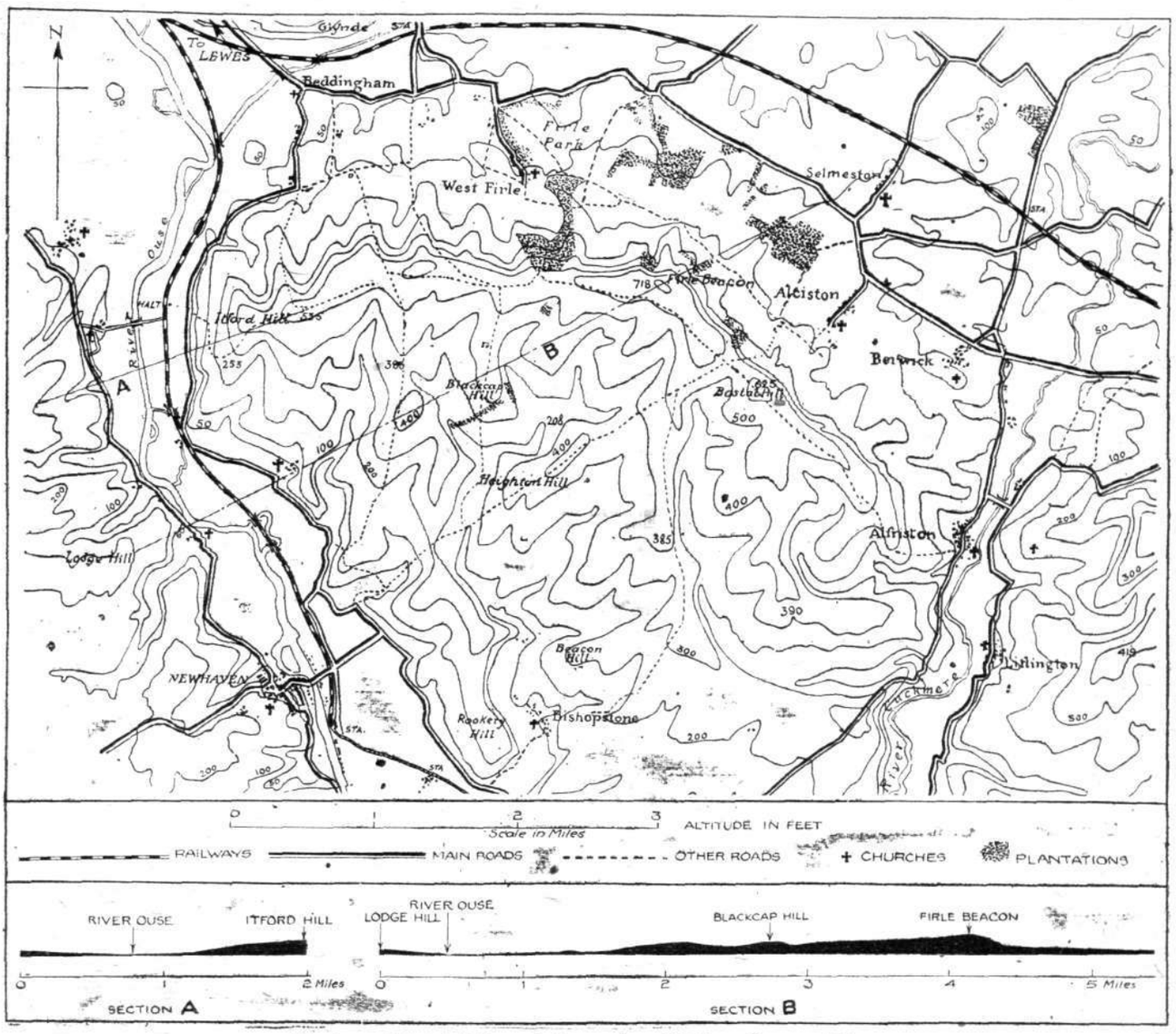
timers" are building gliders. The machine is quite small, being of but 28 ft. span, and is being constructed at the works of George England (1922), Ltd., of Walton-on-Thames. In the competition the machine will be piloted by Mr. Gordon England.

* * *

MR. A. H. KNOTT, of Landore near Swansea, is building a very small monoplane of but 20 ft. span and a weight empty not exceeding 80 lbs. His machine is to be fitted with a propeller driven by the pilot's feet. In spite of the presence of the propeller, it appears doubtful if a monoplane surface of only 20 ft. span can provide sufficient area to make the helicopter is stated to be designed for two men, one of whom sits in front and operates a tractor air screw, while the second, seated farther aft, drives a direct-lift screw, described as a "vertical cone propeller." We are looking forward to a week on the South Downs.

* * *

THE other day we had the privilege of inspecting at the De Havilland Aircraft Co. works at Stag Lane, Edgware, two gliders which are now being constructed. The two machines are identical, thin-section braced parasol monoplanes. We are not at liberty, at the moment, to disclose details of the construction, but hope to publish an illustrated description of the



Contour Sketch-Map of Scene for Gliding Competition.

machine a good glider, whatever its properties may be as a foot-propelled aeroplane.

* * *

MR. J. H. ROBERTSON of 1, Albemarle Street, has entered a patent wing monoplane, which is stated to have been built and successfully flown in 1910. Since then the machine is said to have been re-designed and to have been tested recently with good results.

* * *

Two more entries have been received by the Royal Aero Club, both biplanes. One is by Mr. J. M. Hargreaves and the other by Mr. J. J. O'Fieddy. Of these two machines no further particulars are available at the moment.

* * *

THAT the gliding competition is not going to be entirely without unorthodox designs appears probable. Thus we understand that a foot-driven helicopter is being entered by the British Helicopter Company, of Blackheath. At the moment of writing the machine has not been entered, but it is expected that it will be within the next few days. The machines in a forthcoming issue of FLIGHT. The workmanship is extremely good, as was to be expected from a firm of this standing, and the design is about as simple as it was possible to get it. The difficulty has, we believe, been to get used to the small sizes required in a lighly-loaded glider after being used to the relatively heavy members called for in large power-driven machines, but in spite of this fact the machines promise to work out quite light.

* * *

WITH regard to the site chosen for the gliding competition, this, as announced in the Royal Aero Club Notes on p. 559, is Itford Hill, near Lewes, Sussex. The site appears (we are speaking from examination of a map only, and not from personal inspection of the actual site) to be very suitable, and it certainly has the further not inconsiderable advantage of being within easy reach of London. In the accompanying contour sketch-map of the district the main features of the scene of the competition may be seen. Itford Hill itself is about 500 ft. above sea level, and the organisers of the competition have succeeded in obtaining permission to use

the whole range of hills for three miles eastward as far as Firle Beacon, which reaches an altitude of over 700 ft. above sea level. Briefly these two points—Itford Hill and Firle Beacon—mark the western and eastern limits of the ground available. To the north the range drops fairly rapidly at first, then more slowly, reaching the meadows around Glynde Reach in a distance of about two miles. To the south also the slope is at first fairly steep, gradually flattening out, and ridges running roughly north and south divide the slopes into smaller separate gradients. To the west the slope from Itford Hill is fairly steep, terminating at the foot of the hill in the Ouse valley. Between the foot of the hill and river runs the Newhaven and Seaford line of the L.B. and S.C. railway, but the gradient here is so steep that machines should have no difficulty in clearing the railway and alighting beyond it in the meadows around the River Ouse. In strong westerly and south-westerly winds this side of the hill should produce suitable conditions for flights of considerable duration, while the southern slopes would probably be chosen for flights in which it was desired to cover greater distances.

* * *

As regards accessibility, the site is, as already mentioned, particularly favourably placed. A frequent train service from London to the village of Glynde is available, and from Glynde to Itford Hill is only a distance of about 2½ miles. By road from Lewes the distance is about 4½ miles. Tents will be provided for housing the machines, and competitors may succeed in getting accommodation in the inns at Glynde or West Firle. If not, the nearest hotels appear to be those at Lewes. It seems probable that some enterprising firm at Lewes will run some sort of motor conveyance between Lewes and some point at the foot of Itford Hill. Altogether, the scene for the competition appears to be laid in very pleasant surroundings and if this year's experience proves the district suitable, it is to be hoped that arrangements may be made for retaining the rights to use it for future gliding meetings.

* * *

WE very much regret to have to record this week that the American pilot Allen, who took part in the French gliding competition at Combegrasse and later had his machine sent to Germany, has met with a serious accident while flying in the Rhön Hills. It appears that Allen took his machine out in a very gusty wind, and that on landing he crashed rather badly. He was taken to a hospital at Gersfeld, and is reported to be progressing favourably.

* * *

WE have been asked to publish the fact that, in response to numerous enquiries, the Engineering Works, Mill Hill, Appleby, Westmorland, are about to add an aviation branch to their works. This branch will be devoted solely to aeronautical work, and the services of a well-known pilot and designer have been obtained. The design and construction of gliders or light-powered machines will be undertaken, as will also construction to customers' own designs. The firm is prepared to give free tuition to anyone purchasing a machine from them, and if the necessary number of pupils can be obtained it is intended to start a school for training pupils in gliding and soaring flight.

INTER-CITY AIR RACE

Colonel Spenser Grey's Suggestion

THE suggestion made by Lieut.-Col. Spenser Grey, as a result of his observation of the tremendous enthusiasm at the various controls during the race for the King's Cup, that an inter-city championship race around Britain should be instituted for next year is one which has a great deal to recommend it. As we stated in our Editorial Comment on September 14, 1922, the King's Cup Race aroused widespread interest in and enthusiasm for aviation races, and an annual race between machines representing various cities could scarcely fail to increase greatly the enthusiasm of the population of the cities represented in the race. From interest in a particular air race to interest in aviation in general is but a short step, and if certain difficulties, which do undoubtedly exist, can be overcome, we think that the scheme is an admirable one and one which should meet with general support. Briefly Col. Spenser Grey's suggestion is as follows :—

(*a*) Each city or town desiring to enter for the race would open a subscription list for the building of an aeroplane to represent it.

(*b*) The machines when built would be entered in the race by the town or city for which they were built.

(*c*) All machines entered would be built to one or other of the Air Ministry's specifications for aeroplanes, and after the race would be placed at the disposal of the Royal Air Force, earmarked for the use of the new Auxiliary (or Territorial) Air Force, recruiting for which is to begin in April next year.

(*d*) A challenge cup to be presented to the entrants of the champion machine would be held year by year by the Aero Club, formed by the subscribers to the building of the winning machine.

(*e*) These machines would also be eligible to compete in the King's Cup Race, the Aerial Derby, and any other air races in which the proprietary city might wish them to compete.

The advantages claimed by Col. Spenser Grey for a race of this nature are, briefly, as follows :—

1. It is useless for those who believe in air power to call for a big Air Force while the prevailing cry is for economy. By thus stirring up local patriotism and interest in flying a material addition may be made to our aerial strength by the people who are already believers in air power, and many others may be educated in that belief.

2. The building of the machines will lead to improvements in design and construction, for, having fulfilled the Air Ministry requirements, designers will be encouraged to further efforts towards efficiency in order to win the race.

3. Employment will be given to the design, experimental and constructional staffs of a number of aircraft factories at a time when there is grave danger of those staffs being dispersed owing to lack of employment.

It appears that the first city likely to start the ball rolling by taking practical steps to put into practice Col. Grey's scheme may be Leeds, the home of the Blackburn Aeroplane and Motor Co., Ltd. At a dinner given in honour of Lieut.-Col. Spenser Grey and Mr. R. W. Kenworthy, pilots of the two Blackburn "Kangaroos" which took part in the race for the King's Cup, Mr. Stuart A. Hirst announced that he would undertake to guarantee a substantial prize to the pilot who, in next year's race, puts up the best performance on a Yorkshire-built machine, and expressed the hope that there would be an entry of a machine in the name of Leeds, coupled with a challenge to any other town or city. He could not, he said, conceive of any large centre declining such a challenge.

Sir Edwin Airey undertook to guarantee a prize for the pilot making the best time between the starting point and the city of Leeds, and Mr. David Little, President of the Leeds Chamber of Commerce, promised to bring the scheme to the early notice of that body with a view to launching it successfully.

There is little doubt that many other towns will follow suit, and if a set of rules can be drafted which will ensure that all machines will stand an equal chance in such a race, there is every possibility that next year will see the most important air race ever held in this country. We cordially invite suggestions from our readers, and shall be glad to open our columns to a discussion of the best lines upon which to work in order that the race may combine the greatest interest and the fullest participation with the greatest utility in connection with the new Auxiliary (or Territorial) Air Force which is to come into being during the spring and summer of next year. We understand that the Air Ministry takes a favourable attitude towards the scheme, especially if, as suggested, the machines entered are built to Air Ministry specifications.

London's Air Peril

SPEAKING last Thursday night at the monthly dinner of the Royal Naval Volunteer Reserve (Auxiliary Patrol), Admiral Mark Kerr, referring to the possibility of an attack upon this country from the air, said that the one thing that would kill us at the commencement of a great war would be a great raid on London—the heart of the Empire. He spoke of the possibility of 500 'planes coming unexpectedly over London, each dropping 100-kilo. bombs. "I feel," he said, "we are at the mercy of a near country. Don't let us take anything for granted. We have been the advanced people in the world as far as truth, justice and honour are concerned. In the past we have played the game. At the present time we are getting a little shaky."

A Scandinavian Altitude Record

A NEW altitude record for Scandinavia was put up on Friday last, when Lieut. Gottenburg, of the Norwegian Army Air Service, accompanied by a passenger, reached an altitude of 23,293 ft. Both were provided with oxygen apparatus. The former record was 16,732 ft.

FLIGHT

THE COUPE DEUTSCH RACE AT ETAMPES

Saturday's Great International Event

THE greatest international speed race of the year, the race for the Coupe Deutsch, will be flown over the usual course between Etampes (Villesauvage) and La Marmogne on Saturday, September 30. The distance between the turning points is 50 kms. (31 miles), so that altogether three out-and-home trips, totalling 300 kms. (186 miles) will have to be made.

At the moment of writing it is not definitely known which of the French machines entered will fly in the race, as the eliminating trials take place on September 27, but five machines will take part, three from France, one from Italy, and one from Great Britain.

The British representative is the Gloucestershire Aircraft Co.'s Mars I, 450 h.p. Napier "Lion" engine. This machine, which will, of course, be piloted by Mr. J. H. James, is the same as that flown by James in the Aerial Derby, which he won at an average speed of 178 m.p.h. For the Coupe Deutsch, however, the machine has been fitted with smaller wings, and as James was not flying "all-out" in the Derby, his speed in the Coupe Deutsch race may confidently be expected to be considerably greater. How much greater we have no means of knowing, since not only pure speed but keeping a good course and wasting no time at the turning points count for a great deal in the Coupe Deutsch. The French pilots have, of course, been flying frequently over the course, and have been getting used to it under different weather conditions. Also they have been practising quick turns around pylons, and we remember that Sadi Lecointe has once (in the Gordon-Bennett race of 1920) been timed to round the pylon at Villesauvage in three seconds. However, "Jimmy" is something of an artist himself, and we have no doubt he will get the "Bamel" around in the quickest time possible. On pure speed he may have a hard fight against such projectiles as that on which Lecointe will be mounted, but we are certainly not without hope that on average speeds over the course James will be able to put up a good fight. He is under a handicap in being our only representative (as against three from France), but he and his machine are undoubtedly the best combination which could be found in Britain today, and we wish him every success in the great race.

The Italian representative is Brack-Papa, who will be flying a Fiat biplane with 700 h.p. Fiat, type A.V. 12-cylinder, engine. His machine has a length of 25 ft. 9 ins. and a wing span of 34 ft. 10 ins. The wing area is 237 sq. ft., and the weight empty of the machine is 3,080 lbs. On this machine Brack-Papa was recently credited with a speed of 209 m.p.h., but it is now learned that the Italian Aero Club have not homologated the flight as a record. The reason is not known.

No less than six French machines have been entered for the Coupe Deutsch, and as each country may only be represented by three machines, eliminating trials will have to be held. These, as already stated, will take place on September 27, but as FLIGHT goes to press before then it will not be possible to state this week which of the six machines will fly in the actual race. The six French machines entered are three Nieuport-Delage machines, one Madon "Simplex," one Nungesser monoplane, and one Blériot-Casale biplane.

Of the three Nieuport-Delage machines entered one is a biplane, to be flown by Lasne or Berthelin. This machine is probably generally similar to the biplane on which some of Lecointe's records have been established in the past. The machine is not so fast as the monoplanes, and is probably intended more as a stand-by than as a serious competitor. The machine, which has a Hispano-Suiza engine of 320 h.p., is 20 ft. 4 ins. length over all, with a span of 19 ft. 9 ins. and a wing area of 132 sq. ft. and weighing 1,530 lbs. empty.

The second Nieuport-Delage is a "Sesquiplan" (one-and-a-half plane), and will be piloted by Lasne or Lecointe. It has a length over all of 23 ft. and a wing span of 26 ft. 10 ins. The wing area is only 130 sq. ft., and the weight empty 1,720 lbs. The engine is a 320 h.p. Hispano-Suiza.

The real racer from the Nieuport stable is, however, the small "Sesquiplan," which will be flown by Lecointe. This machine, although similar in general to the older type, has been further reduced in size (although this would scarcely seem possible), and has an overall length of but 20 ft. and a span of 26 ft. 3 ins. The wing area is 118 sq. ft., and the weight empty is 1,660 lbs. The engine of this machine also is a 320 h.p. Hispano-Suiza. In a recent test flight over the measured 1 km. course, Sadi Lecointe established the following times on this machine:—First kilometre in $10\frac{2}{5}$ secs. (215 m.p.h.), second kilometre in $10\frac{3}{5}$ secs. (210 m.p.h.), third kilometre in $10\frac{2}{5}$ secs. (215 m.p.h.), and fourth kilometre in $10\frac{4}{5}$ secs. (206·5 m.p.h.), or an average of 211·6 m.p.h. To be considered for world's records flights have to be made over a measured course of 1 km., two flights in each direction, and it was in doing this that the speeds indicated above were obtained. It goes without saying that in the Coupe Deutsch, with the time which must necessarily be wasted at the turning points, the machine will not do the same speed, but with skilful handling the Nieuport-Delage racer should be capable of close upon 200 m.p.h. if the day prove reasonably calm, and Sadi is in his usual form. It will be seen that the Mars I will have its work cut out to hold its own, and the race may well prove a very close one between the Nieuport, the Mars I and the Fiat. Incidentally, it is rumoured that Lecointe intends to retire shortly, and that the Coupe Deutsch may probably be the last great race in which he will fly. Frankly, we are rather pleased to hear this. Lecointe is not only one of the finest pilots in the world, but he is also a thoroughly good sportsman and a most charming personality, and it cannot be denied that these races, with speeds constantly creeping up, are getting dangerous. Sadi has had many bad tosses, and it would be a thousand pities should he tempt fate too far by continuing. We therefore wish him good luck in the race, and hope that when it is over—whether he wins it or not—he will retire and settle down at some less risky occupation that we may have him among us for many many years to come.

Reference has already been made in FLIGHT to the Blériot-Casale machine which is a biplane of the typical Spad-Herbemont type, and has a Lorraine engine of 450 h.p. The length of this machine is 21 ft. 4 ins. and the span 28 ft. 2 ins. The wing area is 273 sq. ft. and the weight empty 2,730 lbs. In spite of its high power, it is not expected that this machine, which is an adapted military machine and not designed as a racer in the first instance, will be one of the three French machines chosen after the elimination trials. The machine is not, however, a slow one by any means, and its designer, M. André Herbemont, expects that it will be capable of covering the Coupe Deutsch course at an average speed of about 295 kms. (183 miles) per hour. The machine will be flown in the eliminating trials, and in the great race itself if it passes the former, by Jean Casale.

Some curiosity has been aroused as to the "parentage" of the machine which is to be flown by Nungesser. It is, we learn, a cantilever monoplane with 700 h.p. Fiat engine, and although classed among the French machines, it is stated to be constructed by Fiats. It is therefore presumed that the machine has been, if not designed, at any rate built by the French branch of the Fiat company. The main particulars of the machine are as follows: Length overall, 19 ft. 9 ins.; span, 43 ft. 6 ins.; area, 239 sq. ft.; weight empty, 3,080 lbs.

The machine to be flown by Madon is of the tailless "Simplex" type Madon-Carmier. The main characteristics are: Length overall, 23 ft.; span, 26 ft. 3 ins.; area, 175 sq. ft.; weight empty, 1,540 lbs.; engine, 320 h.p. Hispano-Suiza. Madon has been trying-out a small biplane with rotary engine at Etampes for some months past, and is stated to have obtained very good results. Evidently the new machine is an attempt to apply the experience thus gained to a fast racing machine. The machine, which was designed by Madon, who will pilot it, and Carmier, chief engineer of Schwarts and Léon See, the constructors, is, it will be seen from above figures, quite a small affair, and its behaviour will be watched with more than ordinary interest on account of its unorthodox design.

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Gloucestershire Machines for Greece

AFTER competing in the race for the Coupe Deutsch, Mr. J. H. James will proceed to Salonica to test a large batch of machines sold to the Greek Army by the Gloucestershire Aircraft Company, the constructors of the Mars I. These machines are of the Mars VI type, which are practically Nieuport Nighthawks fitted with the new Siddeley "Jaguar" engines. Visitors to Croydon on the occasion of the Aerial Derby will have seen one of these machines perform, and cannot have failed to notice its extraordinary climb, than which probably nothing better exists today. We congratulate the Greeks on their choice.

Paris–Bukarest in 14 Hours

AN aeroplane piloted by Maj. Vuillemin, of the French Army Air Service, and carrying a passenger, left Paris at 5 a.m. last Saturday and arrived in Bukarest at 7 p.m. the same evening.

THE LONDON-CONTINENTAL SERVICES

FLIGHTS BETWEEN SEPTEMBER 17 AND SEPTEMBER 23, INCLUSIVE

Route‡	No. of flights*	No. of passengers	No. of flights carrying		No. of journeys completed†	Average flying time	Fastest time made by	Type and (in brackets) Number of each type flying
			Mails	Goods		h. m.		
Croydon–Paris	37	121	14	25	32	3 5	D.H. 34 G-EBBV (1h. 50m.)	B. (4), D.H. 18 (1), D.H. 34 (5), G. (8), H.P.W.8B (3), Sp. (1).
Paris–Croydon	36	137	10	27	33	3 38	D.H. 18 G-EAWX (2h. 4m.)	B. (5), D.H. 18 (1), D.H. 34 (5), G. (8), H.P.W.8B (3), Sp. (2).
Croydon–Brussels ...	7	29	—	1	7	2 21	D.H. 34 G-EBBR (1h. 50m.)	D.H. 9 (1), D.H. 34 (3), Vi (1).
Brussels–Croydon ...	7	42	—	—	6	3 11	D.H. 34 G-EBBV (2h. 35m.)	D.H. 9 (1), D.H. 18 (1), D.H. 34 (4).
Croydon–Rotterdam–Amsterdam.	6	8	6	6	5	2 53	Fokker H-NABV (1h. 52m.)	F. (5).
Amsterdam–Rotterdam–Croydon.	7	10	4	5	7	2 54	Fokker H-NABI (2h. 6m.)	D.H. 34 (1), F. (6).
Totals for week ...	100	347	34	64	90			

* Not including "private" flights. † Including certain journeys when stops were made *en route*.
‡ Including certain diverted journeys. § Rotterdam.

Av. = Avro. B. = Breguet. Br. = Bristol. Bt. = B.A.T. D.H.4 = De Havilland 4, D.H.9 (etc.).
F. = Fokker. Fa. = Farman F.50. G. = Goliath Farman. H.P. = Handley Page. M. = Martinsyde. Sp. = Spad.
Vi. = Vickers Vimy. Vu. = Vickers Vulcan. W. = Westland.

The following is a list of firms running services between London and Paris, Brussels, etc., etc.:—Co. des Grandes Expresses Aériennes; Daimler Hire, Ltd.; Handley Page Transport, Ltd.; Instone Air Line; Koninklijkie Luchtvaart Maatschappij; Messageries Aériennes.

Incidental Flying.—The De Havilland Co. ran a daily service between Lympne and Ostend with a D.H. 16 making one trip each way. The Aircraft Disposal pilots (Perry, Piercey and Stocken) were busy testing Bristol Fighters, D.H. 9a and Martinsyde F. 4 machines at Croydon.

LONDON TERMINAL AERODROME

Monday evening, September 25.

WHAT will probably prove to be the most important event in the history of civil aviation is now resulting from the flight of the Daimler Airways D.H.34 to Berlin. This machine arrived back at the aerodrome late on Saturday evening carrying as passengers Col. Searle, Maj. Woods Humphreys, and a Maj. Wronsky, who is representing the Deutsche Luft Reederei, the big German air transport organisation. Maj. Wronsky has come to London to make the final arrangements for the running of the London-Berlin air service, and I understand that while the Daimler representatives were in Berlin and Amsterdam negotiations were commenced, and are already in an advanced stage, for the formation of an organisation to run the air transport lines of Northern Europe.

This organisation, consisting of the Daimler Airway, the Royal Dutch Air Service, the Deutsche Luft Reederei, and the Danske Luftfartselskab, are to make a working agreement for the running of air-lines through their various countries. The only big question that remains to be settled is that of the size and horse-power of the German "air expresses," which are limited under the terms imposed on Germany by the Allies. This question has already been discussed by the Governments concerned, and it is probable that an agreement on the lines of limiting the number of higher-powered "air expresses" that the Germans are to build will be arrived at.

The Daimler people are enthusiastic over the prospects of the new route to Berlin. The country is practically flat the whole way, the only high obstacles being wireless masts, which, both in Holland and Germany, rise at some stations to a height of 1,000 ft. These, however, can easily be avoided by arranging the route so that they are given a wide berth. The return journey from Hamburg to London on Saturday was accomplished in a flying time of barely five hours.

Bad Weather on the Continental Routes

THE weather during the week has been all against flying, and, in consequence, the services have been rather "ragged." The early-morning newspaper services have been considerably delayed, and on one occasion had to be cancelled owing to the morning mists. Several machines flew through the gale, which seriously delayed the cross-Channel boat services during the week. On Sunday the entire services were held up with the exception of one "Goliath," which managed to get through. On this day Mr. Alan J. Cobham, in spite of the weather, made a splendid flight to Paris and back to get pictures of the Carpentier-Siki fight for one of the London picture papers. He left Paris too late to arrive at Croydon before dark, and crossed the Channel in the dusk in very bad flying weather, the clouds at times being within a few feet of the water. He picked up the lights at Lympne aerodrome, and completed his flight to Croydon in the dark, arriving there at about a quarter-past eight.

In connection with the weather, arrangements have been made for meetings between the chief pilots of the three British companies to decide if conditions are fit for flying. If their decision is against flying, the C.A.T.O. issues a notice to the British firms stating the findings of the meeting, and saying that no British machine will leave until further notice.

One of the K.L.M. monoplanes, *en route* from Croydon to Rotterdam, was compelled to descend at Lympne with engine trouble during the week, and it was found that one of the big-ends had gone. This is the first time this season that the K.L.M. have had a forced landing in England for engine trouble. No new engine was available on this side, and a new one was flown over in another machine, together with mechanics, from Holland.

Economies are being made in the working of the aerodrome by the Air Ministry, and the staff of the C.A.T.O. has been considerably reduced. I understand that this is the first move towards cutting these expenses considerably.

The wind-indicator which was beside the control-tower has been moved to a position near the Daimler engine-shops, and a new fire hydrant is being installed in the same position. A number of sheds, petrol-pumps, and other inflammable erections have been built in this section of the aerodrome lately, and a fire hydrant had become an urgent necessity.

More Machines for "Air Taxi" Work

THE machine entered by the Duke of Sutherland for the King's Cup race, a D.H.9, has been sold to the Surrey Flying Services, who intend to use it for air-taxi work. This company have been busily re-erecting one of the Royal Aero Club Avros which was crashed a short time ago, and have also re-conditioned their own Renault-Avro, which came to

grief in a corn-field when starting for Ostend. This machine is, I understand, to be sold to a private owner, who intends to use it for taking his friends for air jaunts.

During the high winds in the early part of the week pilots flying over the dunes of Northern France observed sand-storms of quite respectable size being whirled along by the wind beneath them. The storms extended to a height of about 800 ft., and pilots who have done much flying in arid countries described them as being smaller editions of the violent sandstorms experienced in those lands. This sand in northern France, being whirled about by the wind, has caused machines to force-land at times, owing to it being sucked into the air-intake of the engines.

The Instone Air Line close their Paris service today. Maj. Greer has been in Cologne making all arrangements for the opening of the Cologne service. I am told that the levelling operations at the Brussels aerodrome, combined with the heavy rains, have made the aerodrome so soft that machines sink up to their axles in the mud. One machine was over an hour-and-a-half getting away from the aerodrome, sinking into the mire time after time.

The Messageries Aériennes, or, as they now call themselves, the "C.M.A." Air Lines, have the largest commercial fleet in existence. This consists of 10 Goliaths, 11 5-seater Spads, and 13 Breguets. Their goods' traffic to and from all parts of Europe and London continues to increase, and they will be running special goods machines next spring. In the meantime they are equipping their Goliaths with electric heating for the winter. One of these machines, which has already been to Croydon, has separate heating for each passenger, who controls foot and back warming arrangements by a switch at his side.

The Goliath pilots are putting up a very fine show in the bad weather. One day this week the Grands Express Goliaths were the only machines to get through in both directions between London and Paris.

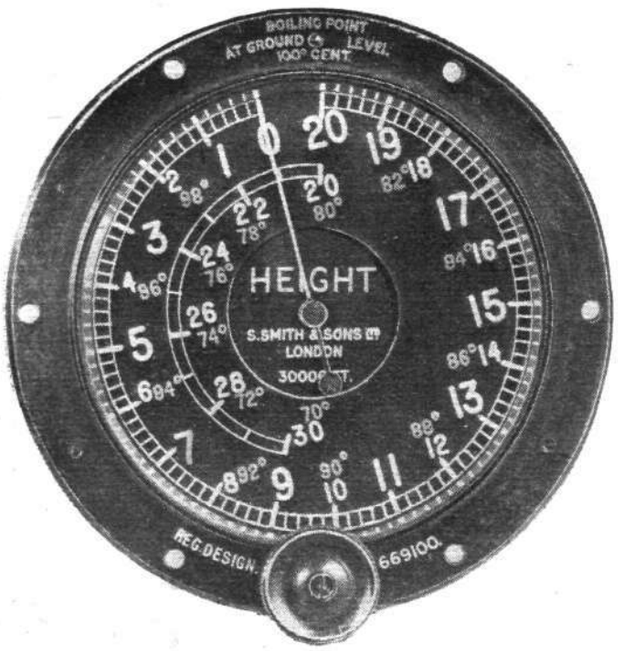
There is a rumour on the aerodrome that Handley Page Transport are building six more machines to cope with the passenger traffic on the London-Paris route when they are the only British firm operating next year. These machines will, I understand, be fitted with seating accommodation for 16 passengers.

I am able to announce, from information just to hand, the extremely low "air-fares" which will be charged on the new London-Berlin route. They will be as follows:—London to Berlin (single), £5 10s. (which works out at about 2*d*. a mile); London to Amsterdam, £4; Amsterdam to Berlin, £2; Hamburg to Berlin, £1.

"THE SMITHS OF CRICKLEWOOD"

A Brief Visit to the Works of S. Smith and Sons (M.A.), Ltd.

CHANCING to be in Cricklewood direction the other day, we took the opportunity of paying a hurried visit to the works of S. Smith and Sons (M.A.), Ltd., where the famous Smith Aviation Instruments are made. As a result of this visit two outstanding impressions gave us a pleasant surprise, one being the extensive area occupied by these works, together with the great activity going on therein, and the completeness or self-contained character of the work carried out. Practically speaking, every instrument turned out from the works is manufactured from the raw material, on the premises, and not built up from ready-made parts. This point was particularly emphasised as regards the very large range of Smith's clocks, in which the movement is entirely of their own manufacture, and not imported from Switzerland.



THE SMITH "BOILING POINT" ALTIMETER: The boiling point at any height is indicated by red figures against the respective altitude figure.

Of course, in common with others in the aviation industry, S. Smith and Sons are feeling the prevailing slackness of trade to a certain extent, but are determined to keep their aviation section going, in order to retain the valuable plant and skilled workers that have given such valuable service in the past. It is obvious that occasional orders for a new indicator here and an altimeter there are of little use as a means of keeping a production plant going to the best advantage—to say nothing of maintaining the necessary and expensive testing and experimental section. However, for all that, we managed to see, on the occasion of our visit, a fair amount of aviation stuff going through, but naturally, after supplying the British as well as Allied Governments with instruments during the war, the works do not now seem to be *quite* so lively.

As regards the testing and experimental sections of the Cricklewood works, these we noticed were exceptionally well equipped, and some very interesting experimental instruments were undergoing trials, about which we hope to have something to say on a future occasion.

In the testing section we saw engine revolution indicators being adjusted and calibrated by an extremely ingenious "tuning fork" device—similar, we believe, to that evolved by the R.A.E.—and then there were rows and rows of clocks, with their neat log cards attached, undergoing their reliability trials, which last, we understand, for several days.

In another part of the works we saw painting, lacquering, and plating in progress—another item that is done "on the premises." Of course, besides the various aviation instruments, the well-known motor accessories are also produced at the Cricklewood works, and form a large and active section of the work carried on there.

We must also mention the excellent arrangements made for the care and comfort of the employés, who have a large and well appointed canteen—which, when the tables, chairs, etc., are moved away, forms an ideal and well patronised dancing hall—and an efficiently equipped first-aid hospital.

In conclusion we take the opportunity of giving some brief particulars of one of the recent aviation instruments produced at Cricklewood known as the Smith Boiling Point Altimeter, which is shown in the accompanying illustration.

The Smith Boiling Point Altimeter is similar in every other respect to the standard instrument, embodying certain improvements which give it almost entire freedom from lag when the machine is ascending, and in addition it has the special advantage of a subsidiary set of figures incorporated on the dial in red, which show the boiling point of water at various altitudes. The value of this scale, of course, is particularly great when flying under extremely cold conditions, and in addition it leaves the ordinary radiator thermometer dial quite free of boiling point figures which, due to the small space available, only tend to crowd and confuse the appearance of the dial.

With the Smith Radiator Thermometer the dial is left quite plain, and merely shows the actual temperature and degrees Centigrade, and is used in conjunction with the boiling point altimeter, which shows at a glance the temperature of the water under all conditions.

Readers might be reminded that in any case even with the older type of service radiator thermometers it was necessary to refer to the altimeter before correcting in order to ascertain the height at which the machine was flying, while with the Smith instrument the same operation is gone through, but the matter is more simple on account of the larger dial.

AIRISMS FROM THE FOUR WINDS

Apropos the exploring expedition under the leadership of Capt. Frank Hurley which is being launched to take bearings in New Guinea from the air, a correspondent who has recently returned from our Papuan possession, writing to *The Times* upon the undertaking, gives the following somewhat humorous reminiscences of his own experiences in the same line from—*terra firma*. He says :—

" Exploring New Guinea from the air sounds a venturesome project. It could not be much more exhausting than exploring New Guinea on land, and has certain distinct advantages into the bargain. Dense jungle country, precipitous ravines and ' razor-backed ' mountains all combine to make exploration difficult and dangerous, and comparatively little is known about the interior of the island.

" Memory takes me back to the early days of the Australian occupation of German New Guinea. The District Officer at Ablingi, on the south coast of New Britain (to the north of the mainland), had received orders to report on the possibility of a road right across the island to Talassea.

" It was hot work, that patrol inland—with a squad of black ' boys ' crashing on ahead, carving a way for us through the tough tropical creepers that hung like a curtain across our path and hid the sky above. We fell down precipices concealed by the treacherous undergrowth ; we were hauled up the sheer face of the mountain-side by our native police orderlies. And one night, as we sat under the mosquito netting outside the District Officer's tent, eating a supper of bully beef and paw-paw, there came a runner from headquarters with a polite suggestion that we should requisition horses if we thought our work would be expedited.

" ' Horses ! ' said the District Officer, with a sad smile, ' What we really need if we want to see this country is a blooming aeroplane.' "

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" APPARENTLY," continues the story, " they are trying the ' blooming aeroplane '—or at least a seaplane—in the British territory, and yet I do not know that I envy the airmen their job. It is a sporting proposition. They will find excellent harbours for landing-places along the coast, but with a very few exceptions the rivers inland are poor affairs, overhung by thick trees and full of reeds and snags, with occasional crocodiles. Of course, the Fly is one of the exceptions ; one could take a fair-sized boat hundreds of miles up its course.

" If it is successful the expedition should obtain some most interesting results ; the islands abound in unsuspected harbours and inlets that are hidden from the sea and inaccessible from the land. It has a good leader. Frank Hurley is an adventurous spirit who has ' made good ' in many parts of the world. He went to the Antarctic with Sir Douglas Mawson's party ; he fought with the A.I.F. on Gallipoli, and afterwards became official photographer with the Australian Army ; he met Ross Smith at Darwin, and flew south across the continent with him, getting some wonderful photographs of Australia. Mr. L. Hordern (who is a member of a great ' universal provider ' firm in Sydney) has made seaplaning a useful hobby, and has already carried out extensive experiments in surveying on the Australian coast.

Silly questions we have been asked :

III.—(*You have just "forced" landed—having run out of petrol.*)
" May I fill my Patent Lighter from your tank ? "

FLIGHT

THE ROYAL AIR FORCE

London Gazette, September 19, 1922

General Duties Branch

Group Capt. A. E. Borton, C.B., C.M.G., D.S.O., A.F.C., to be actg. Air Commodore; Aug. 31.

The following are granted short service commns. in rank stated, with effect from, and with seny. of, date indicated :—

Pilot Offrs. on Probation.—R. C. Brooke-Hunt, H. C. E. C. P. Dairymple, J. Francis, J. H. G. Franklin, V. J. Hatton, H. M. Kenyon, W. H. E. Labatt, L. E. Maynard, N. P. C. Mellor, H. V. Michell, B. N. Murgatroyd, R. V. M. Odbert, A. J. Peacey, W. H. Phillips, C. J. Pooley, W. J. E. Rodwell, B. H. Shaw, D. C. D. Stephen, A. E. Stewart, O. B. Swain, A. W. Taylor, A. C. Trendell, W. C. Venmore, S. R. Walters, W. P. Wiltshire, T. J. Woods, L. B. W. B. Wride; Sept. 2.

Wing Comdr. G. P. Grenfell, D.S.O., is restd. to full pay from half-pay; Sept. 14.

The following are transfd. to Reserve, Class C.—Flight Lieut. A. R. T. Pipon, D.S.C.; Sept. 6. Flying Offr. M. Goodall; Sept. 12.

Flying Offr. W. L. Hope resigns his short service commn., and is permitted to retain rank of Lieut.; Sept. 11.

Flying Offr F. S. Chapman is placed on retired list on acct. of ill-health contracted in Service; Sept. 20.

Stores Branch

Flying Offr. H. D. Fletcher is transfd. to Stores Branch from General Duties Branch; July 15.

The following Flying Offrs. are transfd. to Stores Branch for Accountant duties from General Duties Branch.—J. M. Adams; Sept. 8. P. E. D. Addis; May 22.

Medical Service

Flight Lieut. J. Paxton relinquishes his temp. commn. on ceasing to be employed; Aug. 31.

Memoranda

The follg. Cadets are granted hon. commns. as 2nd Lieuts., with effect from the dates of their demobilisation.—G. A. Aston, 322153 A. Edwards, 317541 F. Kemp, 321544 W. E. Pattle, S. W. Powell, 148043 E. S. Redfearn, 319540 J. J. Smith, 624679 H. C. Thom.

Hon. 2nd Lieut. A. T. Blake is deprived of his commn. on sentence by Field General Court-Martial to penal servitude.

London Gazette, September 22, 1922

General Duties Branch

Capt. A. J. Carlielle, R.A.S.C., is granted a temp. commn. as a Flying Offr. (Hon. Flt. Lieut.) on secdg. for four years' duty with the R.A.F.; April 8 (substituted for *Gazette*, July 4). Wing Comdr. D. L. Allen, A.F.C., is placed on half-pay, Scale A, from Sept. 18 to 20, inclusive. Flying Offr. H. J. Q. Campbell is dismissed the Service by sentence of Gen. Court-Martial; June 25

Chaplains' Branch

The Rev. H. Marshall, M.A., is placed on the retired list; Sept 7 (substituted for *Gazette*, Sept. 5).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the R.A.F. are notified:—

Air Commodore: E. A. D. Masterman, C.M.G., C.B.E., A.F.C., from Half-pay List to Central Flying School (Inland Area). (Supernumerary.) 2.10.22.

Wing Commander: D. L. Allen, A.F.C., from R.A.F. Depôt (Inland Area) to Half-pay List. 18.9.22.

Wing Commander: A. V. J. Richardson, O.B.E., M.B., D.P.H., from R.A.F. Depôt (Inland Area) to Air Ministry (D.M.S.). 18.9.22.

Wing Commander: J. McIntyre, M.C., M.B., M.A., from Air Ministry (D.M.S.) to Headquarters, No. 1 School of Technical Training (Boys) (Halton) (Supernumerary.) 18.9.22.

Squadron Leaders: J. T. Whittaker, M.C., from R.A.F. Depôt (Inland Area) to Headquarters, No. 12 Wing, Ireland. For "Air" Staff duties. 18.9.22. G. G. A. Williams, from No. 56 Squadron (Middle East) to Aircraft Depôt, Egypt (Middle East). (Supernumerary.) 8.9.22. A. T. Harris, A.F.C., from No. 31 Squadron (India) to Headquarters, R.A.F., Iraq. Supernumerary.) 28.7.22.

Flight Lieutenants: C. R. Richardson, from No. 70 Squadron (Iraq) to R.A.F. Depôt (Inland Area). (Supernumerary.) 6.8.22. B. Ankers, D.C.M., from No. 4 Flying Training School (Middle East) to R.A.F. Depôt (Inland Area). (Supernumerary.) 23.8.22. W. Burkinshaw, from Palestine Wing Headquarters (Middle East) to R.A.F. Depôt (Inland Area). (Supernumerary.) 23.8.22. P. C. Livingstone, D.P.H., from No. 20 Squadron (India) to R.A.F. Depôt (Inland Area). (Supernumerary.) 12.8.22. C. A. Harrison from R.A.F. Depôt (Inland Area) to C. and M. Party, Biggin Hill (Inland Area). 5.9.22. O. Armer from No. 5 Flying Training School (Inland Area) to No. 2 Squadron (No. 12 Wing, Ireland). 15.9.22. A. H. Wann, from R.A.F. Depôt (Inland Area) to School of Naval Co-operation and Aerial Navigation (Coastal Area). (Supernumerary.) 7.9.22. (Substituted for the notification which appeared in R.A.F. Intelligence dated 29.8.22.) G. C. Pirie, M.C., D.F.C., from No. 4 Squadron (Inland Area) to Headquarters (Inland Area) for "Air" Staff duties. 1.9.22. P. G. N. Ommanney, from R.A.F. Depôt (Inland Area) to Half-pay List. 11.8.22. J. W. Harper, M.D., from Headquarters, R.A.F. (Middle East), to No. 14 Squadron (Middle East). 11.8.22. J. P. Coleman, A.F.C., from No. 56 Squadron (Middle East) to Aircraft Depôt, Egypt (Middle East). (Supernumerary.) 8.9.22. A. J. Long, from Electrical and Wireless School (Inland Area) to M.T. Repair Depot (Inland Area). (Supernumerary.) 25.9.22. F. Petch, M.B.E., from R.A.F. Depôt (Inland Area) to Inland Area Aircraft Depôt. 1.10.22. L. E. Taylor, M.B.E., from Instrument Design Establishment (Inland Area) to Seaplane Training School (Coastal Area). 1.10.22. A. W. Mylne from Electrical and Wireless School (Inland Area) to R.A.F. Cadet College (Flying Wing) (Cranwell). 20.9.2. J. K. R. Landells, M.B., from R.A.F. Depôt (Inland Area) to No. 2 Squadron (No. 12 Wing, Ireland). 19.9.22. T. McClurkin, M.B., to Research Laboratory and Medical Officers' School of Instruction (Coastal Area). 11.9.22. G. S. Ware, M.B., to Research Laboratory and Medical Officers' School of Instruction (Coastal Area). 11.9.22. H. H. M. Fraser, from School of Photography (Inland Area) to No. 2 Flying Training School (Inland Area). 1.10.22. D. W. Clappen, from School of Photography (Inland Area) to Armament and Gunnery School (Inland Area). 1.10.22. J. F. Gallagher from No. 1 Schoo of Technical Training (Boys) Halton) to R.A.F. Depôt (Inland Area). 23.9.22. David J. Jones, M.B., from No. 1 School of Technical Training (Boys) (Halton) to R.A.F. Depôt (Inland Area). 23.9.22.

Married

Major F. J. ROBERTS, late R.A.F., only son of Mrs. Roberts, and of the late J. F. Roberts, of Buenos Aires, was married on August 8, at Mombasa Cathedral, to MARGERY, younger daughter of Mrs. DOWELL-ELLIS, and of the late J. Dowell-Ellis, of Johannesburg.

To be Married

The engagement is announced between ROYDON E. ASHFORD DASH, D.F.C., only son of R. Ashford Dash, of Berrylands, Surbiton Hill, late of Oxshott, Surrey, and CHRISTINE (CHRISSA), third daughter of F. G. TYRRELL, of Westholme, Hastings, Sussex.

The marriage arranged between Mr. IDRIS MEREDYTH DAVIES (late Captain, Welch Regt., and R.A.F.), elder son of Mr. Timothy Davies, J.P., and Mrs. Davies, of Alltyferin, Carmarthenshire, and 25, Collingham Gardens, S.W., and GWENDOLINE, daughter of Mr. and Mrs. MAURICE B. O'CONNOR, of Ballygunge, Calcutta, and Ballygunge, St. George's Hill, Weybridge, will take place at St. Margaret's, Westminster, on Monday, October 9, at 2.15 p.m.

The engagement is announced between GEORGE ARTHUR DONNE HANCOCK (late Captain, R.A.F.), eldest son of Mr. and Mrs. George Donne Hancock, Westcroft, Exmouth, and nephew of Mrs. R. Donne Hancock, Blake's House, Halse, Taunton, and JOSÉPHA LAURE MARIA LENAERTS, of Brussels.

The marriage arranged between Flight-Lieut. P. B. HUNTER, R.A.F., younger son of Mr. and Mrs. Percy Hunter, of Teddington, and EVELYN MARY, second daughter of the late Mr. E. E. STOODLEY C.B., and Mrs. STOODLEY, of Teddington, will take place at Alexandria early in November.

The engagement is announced of Flight-Lieut., EDWARD RADCLYFFE PRETYMAN, A.F.C., R.A.F., younger son of the late Maj.-Gen. Sir G. Tindal Pretyman, K.C.M.G., C.B., and Lady Pretyman, 19a, Devonport Street, W. 2, and MABEL HENRIETTA LOUISA (GO-GO) ROSS HUME, daughter of Robert and Lady Mabel Sievier, Fitzroy House, Newmarket, and 68, Regency Square, Brighton.

Item

Lieut.-Aviateur Chevalier Willy Coppens, Assistant to the Belgian Military Attaché for Air Service Duties, returned to London on September 24 from Brussels.

ROYAL AERONAUTICAL SOCIETY

New Chairman.—On the termination of the term of office as Chairman of Lieut.-Col. Mervyn O'Gorman, C.B., Professor Leonard Bairstow, C.B.E., F.R.S., becomes Chairman of Council on October 1 for the year 1922-1923.

Election of Members.—The following members were elected at a Council Meeting held on Wednesday, September 13:—Associate Fellow, Miss H. M. Lyon; Student, H. A. Sherwin Gothard.

Presentation of Awards.—The Society's Silver Medal will be presented to Mr. H. R. Ricardo, and the Pilcher Memorial Prize for Students to Mr. S. H. Evans, at the commencement of the first meeting, to be held at the Royal United Service Institution, Whitehall, on Thursday, October 5, at 5.30 p.m.

Library.—The following books have been received and placed in the Library for the use of members of all grades:—"Fuel for Motor Transport" (Second Memorandum), by the Fuel Research Board. "A Short Course in Elementary Meteorology," by W. H. Pick. "Proceedings of the Second Air Conference, held on 7th and 8th of February, 1922," Air Ministry. "All the World's Aircraft," edited by C. G. Grey. "Aeronautic Papers," by J. H. Parkin. "A Dictionary of Applied Physics," Vol. I (Mechanics, Engineering, Heat) and Vol. II (Electricity), edited by Sir Richard Glazebrook. Reports of the First International Air Congress, Paris, 1921. "Report on Ex-German Aerodromes and Material in Back and Occupied Areas," by the Inter-Allied Aeronautical Commission of Control. "Aviation in Peace and War," by Sir F. H. Sykes. "Application de la Resistance des materiaux au calcul des avions," by M. Boileve. "The War in the Air," by Sir Walter Raleigh. "14,000 Miles through the Air," by Sir Ross Smith. "Steel Thermal Treatment," by J. Urquhart. "H. G. Hawker, Airman," by M. Hawker. "Theory of Wave Transmission," by George Constantinesco.

Forthcoming Arrangements.

October 5, 5.30 p.m.—Royal United Service Institution. Presentation of Awards. "The Work of S. P. Langley," by Prof. L. Bairstow.

October 11.—*Scottish Branch.* Annual Meeting. "A Proposed Solution of Aerial Transport Problems," by Sholto Sheppard. "The New Beardmore Engine," by A. A. Sydney.

October 12, 6.45 p.m.—Society's Library. Students' Section. Annual Meeting and Election of Officers. 7.30 p.m.—Inaugural Address by Dr. A. J. Sutton Pippard. Chairman, Lt.-Col. W. Lockwood Marsh. (This meeting is open to all members of the Society.)

W. LOCKWOOD MARSH, *Secretary.*

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SOCIETY OF MODEL AERONAUTICAL ENGINEERS

(London Aero-Models Association.)

THE Competition for Mr. Kelly's Cup for Compressed Air Model Competition has again been postponed until Saturday next, the 30th inst., at 4 p.m., Wimbledon Common, as the state of weather was too unsatisfactory to hold same last week.

On Sunday the 24th inst., members congregated on Parliament Hill, Hampstead, for the purpose of competing for Mr. W. E. Evans' Record Cup for Model Gliders. A dozen members attended with their model gliders, and some excellent results were obtained. The first competitor, Mr. C. A. Rippon, put up some excellent glides, his best being one of 36 secs. The next was one of 41⅗ secs., by Mr. H. L. Davis, which proved to be the record, Mr. C. Burchell running very close with a glide of 37⅘ secs.

Some of the model gliders were of unique construction. Mr. F. de P. Green had a triplane, which was greatly admired, and also a small monoplane, which glided for 23 secs. Judging by the enthusiasm shown by the competitors and the public, model gliding has a great future as a new sport, apart from its scientific value.

A Competition for Mr. D. A. Pilcher's Challenge Cup for Enclosed Fuselage Models Duration will be held on Hackney Marshes at 12 noon, Sunday, October 29, 1922, under the following rules:—

1. The Competition is open to Club members only.
2. The holder of the Cup cannot be challenged for one month.
3. The models to be constructed within the limits of the following formula:—

$$\frac{\text{Length of body in inches}}{5} = \text{min. area of maximum cross section in square inches.}$$

4. The Competition is open to both power-driven and elastic-driven models.
5. Wing loading not under 5 ozs. per square foot.
6. Maximum span limit, 6 ft.
7. The length of the model shall not be greater than the span nor less than two-thirds of the span.
8. The minimum duration flight shall be 15 secs.
9. All flights shall be made under official observation.
10. The flight shall be a duration flight, the time being taken by a stop watch. The model shall leave the ground under its own power, without any assistance from the competitor whatever. The time measured by the observer shall be the period from which the model is clear of the ground to the time it alights, the period while the machine is taxying being excluded.

Meetings are held at Headquarters, 20, Great Windmill Street, Piccadilly Circus, W. 1, every Friday evening at 7.30 p.m. Hon. Sec., A. E. Jones, 48, Narcissus Road, West Hampstead, N.W. 6.

⁂ ⁂ ⁂ ⁂

SIDE-WINDS

A JAPANESE Military Aviation Commission, headed by Col. Koiso, is at present on a visit to this country. On September 14, a visit was paid to the Aircraft Disposal Co. at Waddon, the delegation being shown the very extensive A.D.C. establishment by Col. Darby and Major Grant.

On September 15, the Commission visited the de Havilland Aircraft Works at Stag Lane, Edgware, where the modernised D.H.9 and the new D.H.38 were inspected. Members of the Commission also made a flight in one of the D.H. 34 commercial machines.

On September 20, the Japanese Commission paid a visit to the Napier Works at Acton, where they saw the famous Napier "Lion" and Napier "Cub" being manufactured. It is a compliment to British designers of aircraft and engines that representatives of the Japanese Imperial Military Staff should visit various British works before placing orders for military aircraft and engines.

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AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

Applied for in 1921.

Published September 28, 1922

7,145. LUFTSCHIFFBAU ZEPPELIN GES. Rigid frame for airships. (159,844.)
8,525 A. FLETTNER. Governing of surfaces moving within a non-rigid medium. (175,233.)
8,736. S. M. DUNGAN. Screw propellers. (185,146.)
9,0[illegible]. AUGUSTIN AUTOMATIC ROTARY ENGINE CO. Rotary I.C. engines. (185,149.)
11,200 and 11,202. A. G. BELL. Hydroplanes, hydro-aeroplanes, etc. (163,033 and 163,035.)
13,617. SIR J. B. HENDERSON. Automatic control of the steering of aircraft, etc. (185,162.)
14,158. A. TAYLOR. Direction-finding apparatus. (185,169.)
14,424. J. G. YONGESE. Aeroplanes. (185,175.)
16,323. D. F. BROWN. Aerial machines. (185,248.)
20,027. E. A. STEWART. Rotary engine. (185,297.)

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